

CALASELLUS LONGUS, A NEW GENUS AND
SPECIES OF TROGLOBITIC ASELLID FROM
SHAVER LAKE, CALIFORNIA
(CRUSTACEA: ISOPODA: ASELLIDAE)

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Abstract.—A new genus, *Calasellus*, is proposed for *Asellus californicus* and a new species from Shaver Lake, Fresno Co., California, *C. longus*. The latter is described and illustrated and compared with *C. californicus*. *Calasellus* appears to be most similar to *Asellus* (*Phreatoasellus*) from Japan.

Three species of asellid isopods are known from California. *Caecidotea tomalensis* Harford, 1877, has been collected in 3 counties adjoining San Francisco Bay: Marin, San Francisco, and San Mateo (Bowman, 1974). *Caecidotea sequoiae* Bowman, 1975, has been found only in Liburn Cave, Tulare County. *Asellus* (*Phreatoasellus*) *californicus* (Miller, 1933) has been reported from a well in Lake County and springs in Santa Clara and Napa Counties (Bowman, 1975). The last 2 species are blind and unpigmented troglobites. *Caecidotea tomalensis* is an epigeal species.

The new species described herein, the third California troglobitic asellid, is obviously congeneric with *A. californicus*, which I assigned provisionally to the subgenus *Phreatoasellus* Matsumoto, 1962 (Bowman, 1975). The present study has convinced me that the distinctive characters common to both species entitle them to be separated from other Asellidae and placed in a new genus.

Calasellus, new genus

Diagnosis.—Blind, unpigmented. Body slender, elongate. Mandible with 3-merous palp. Maxilla 1 inner ramus with 5 setae. ♂ pereopod 1 propus slender, palm without processes but with several proximal spines. Dactyl of pereopods 2-7 with accessory unguis. ♂ pleopod 2 endopod with basal spur; bulbous base with fissure and labial spur; distal part produced into long cylindrical process; fissure contained in fine stylet (cannula) originating on base and running parallel to cylindrical process. Pleopod 4 exopod pyriform. Pleopod 5 exopod rudimentary or absent.

Type-species.—*Asellus californicus* Miller, 1933.

Etymology.—*Cal* from California, + *Asellus*. Gender masculine.

Relationships.—*Calasellus* most closely resembles *Asellus* (*Phreatoasel-*

lus) Matsumoto, comprising 5 species from Japan, but Matsumoto's subgenus lacks the accessory unguis on pereopods 2–7, has a very different ♂ pleopod 2 endopod, has an oval pleopod 4 exopod and a well developed oval pleopod 5 exopod.

Calasellus longus, new species

Figs. 1–3

Material examined.—California, Fresno County, Shaver Lake, in Sierra National Forest about 35 miles (56 km) NW of Fresno, elevation 3500 ft (1068 m); collected April 1977 by Michael Lassner in spring box, cold, dark water, depth 2–3 ft: 10 ♂, 1 ♀. A 14 mm ♂ is the holotype (USNM 184223); the other specimens are paratypes (USNM 184224).

Etymology.—From the Latin “longus” = “long,” referring to the elongate body and very long antennae 2.

Description.—Body linear, about $5.4\times$ as long as wide; length of largest ♂ 14 mm, of ♀ with small oostegites 8 mm. Coxae visible in dorsal view. All body segments rather setose. Head nearly twice as wide as long in ♂, about $1.5\times$ in ♀; anterior margin slightly concave; postmandibular lobes weakly developed. Telson oval, about $1.4\times$ as long as wide in ♂, $1.3\times$ in ♀; caudomedial lobe moderately developed in ♂, quite low in ♀.

Antenna 1 reaching slightly beyond segment 4 of antenna 2 peduncle; flagellum 9–11-merous; last 8 segments each with esthete. Antenna 2 about $1.5\times$ body length, flagellum with up to 115 segments.

Mandibles with 4-cusped incisors and lacinia; spine-row with 13 and 14 spines on right and left mandibles; setae on palp rather sparse. Maxilla 1, apex of outer lobe with 13 large spines and 3 subterminal setae; inner lobe with 5 plumose setae. Maxilliped very setose, with 5 retinacula.

Pereopod 1 similar in ♂ and ♀; propus nearly $2\times$ as long as wide, palm straight, without processes, with 2 robust proximal spines; dactyl flexor margin with a few spines on distal half. Pereopods 2–7 slender, elongate, dactyl with accessory unguis.

♂ pleopod 1 slightly shorter than pleopod 2; protopod quadrate, with 3–4 retinacula; endopod about $5.5\times$ as long as protopod and $4\times$ as long as wide, tapering gradually to narrowly rounded apex, medial margin slightly convex, with 6–7 setae on distal half; lateral margin slightly concave, armed with setae except at base. ♂ pleopod 2 protopod about as wide as long, unarmed; exopod proximal segment with 1 lateral seta, distal segment oval with 8 lateral setae and 3 long medial setae, catch lobe well developed; endopod produced into very long slender cylindrical process gradually tapering and curving slightly laterad distally, stylet seta-like, as long as process. ♀ pleopod 2 subtriangular, with 3 short apical setae and 1 short lateral seta. Exopod of pleopod 3 about $1.6\times$ as long and $3\times$ as wide as endopod,

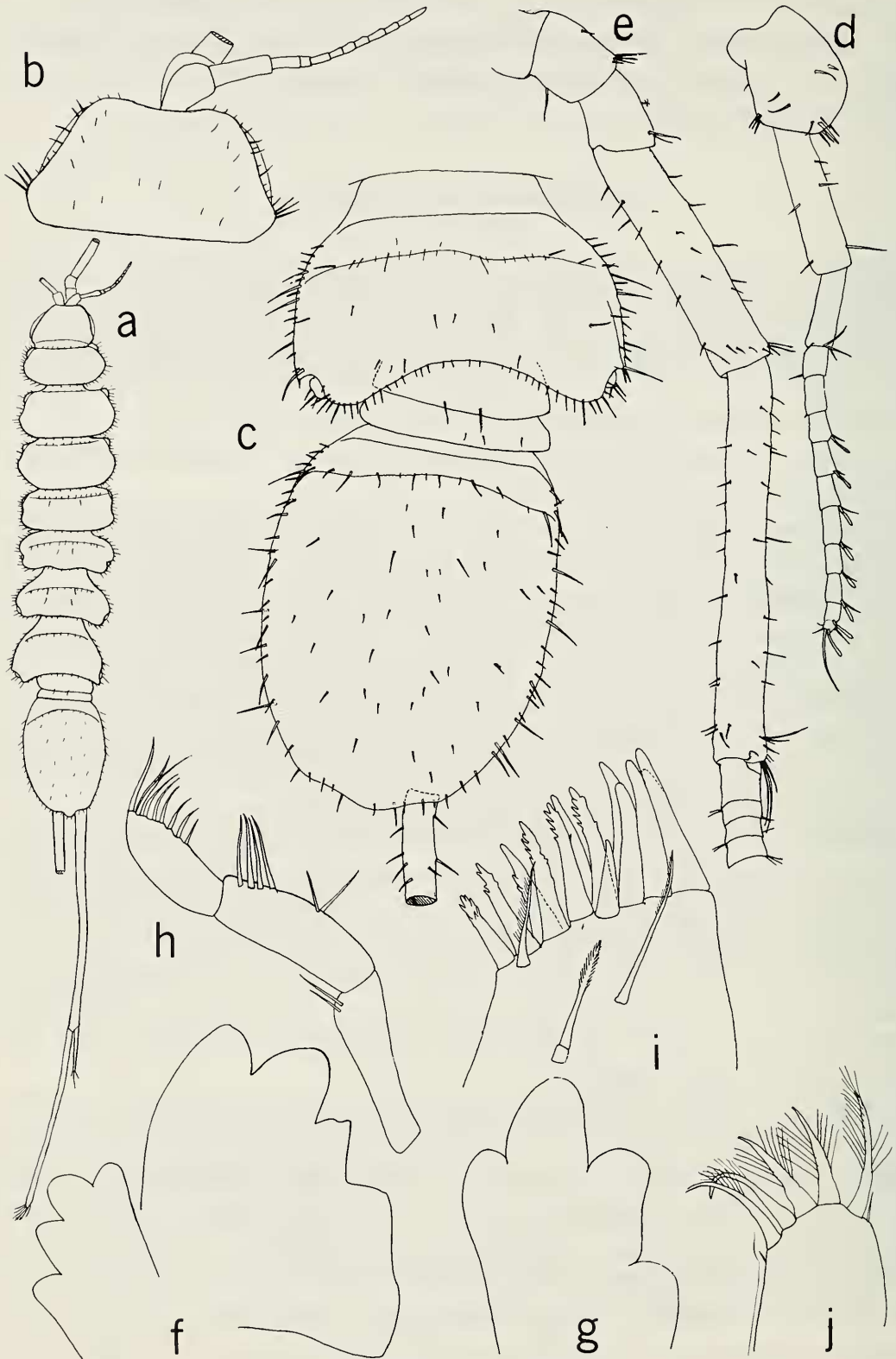


Fig. 1. *Calasellus longus*: a, ♂, dorsal; b, ♂ head, dorsal; c, ♀ pereonite 7, pleon, and telson, dorsal; d, Antenna 1; e, Antenna 2 peduncle; f, Incisor and lacinia of left mandible; g, Incisor of right mandible; h, Palp of left mandible; i, Maxilla 1, outer lobe; j, Maxilla 1, inner lobe.

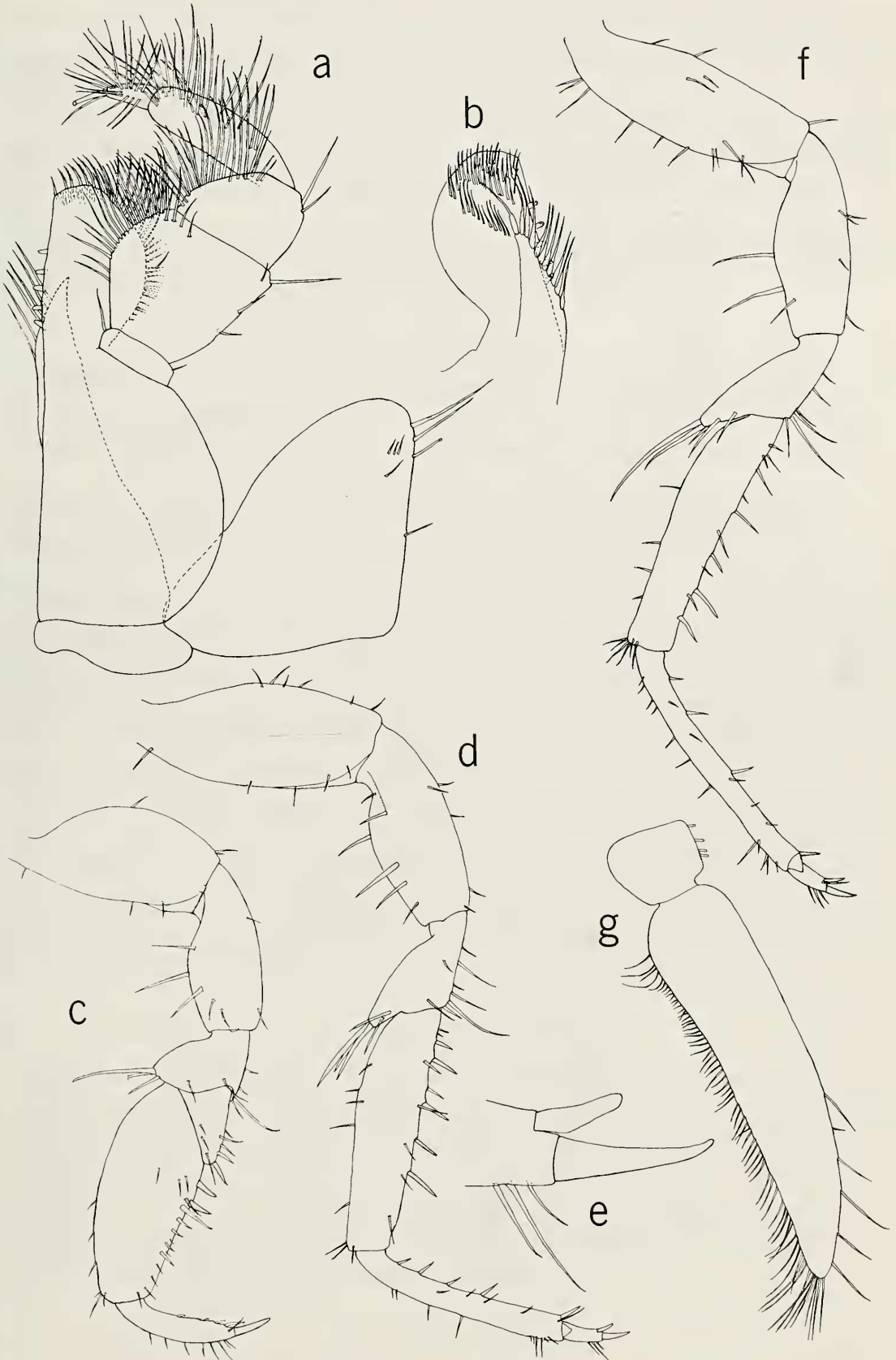


Fig. 2. *Calasellus longus*: a, Maxilliped; b, Endite of maxilliped; c, ♂ pereopod 1; d, ♂ pereopod 2; e, Distal end of dactyl, ♂ pereopod 2; f, ♂ pereopod 4; g, ♂ pleopod 1.

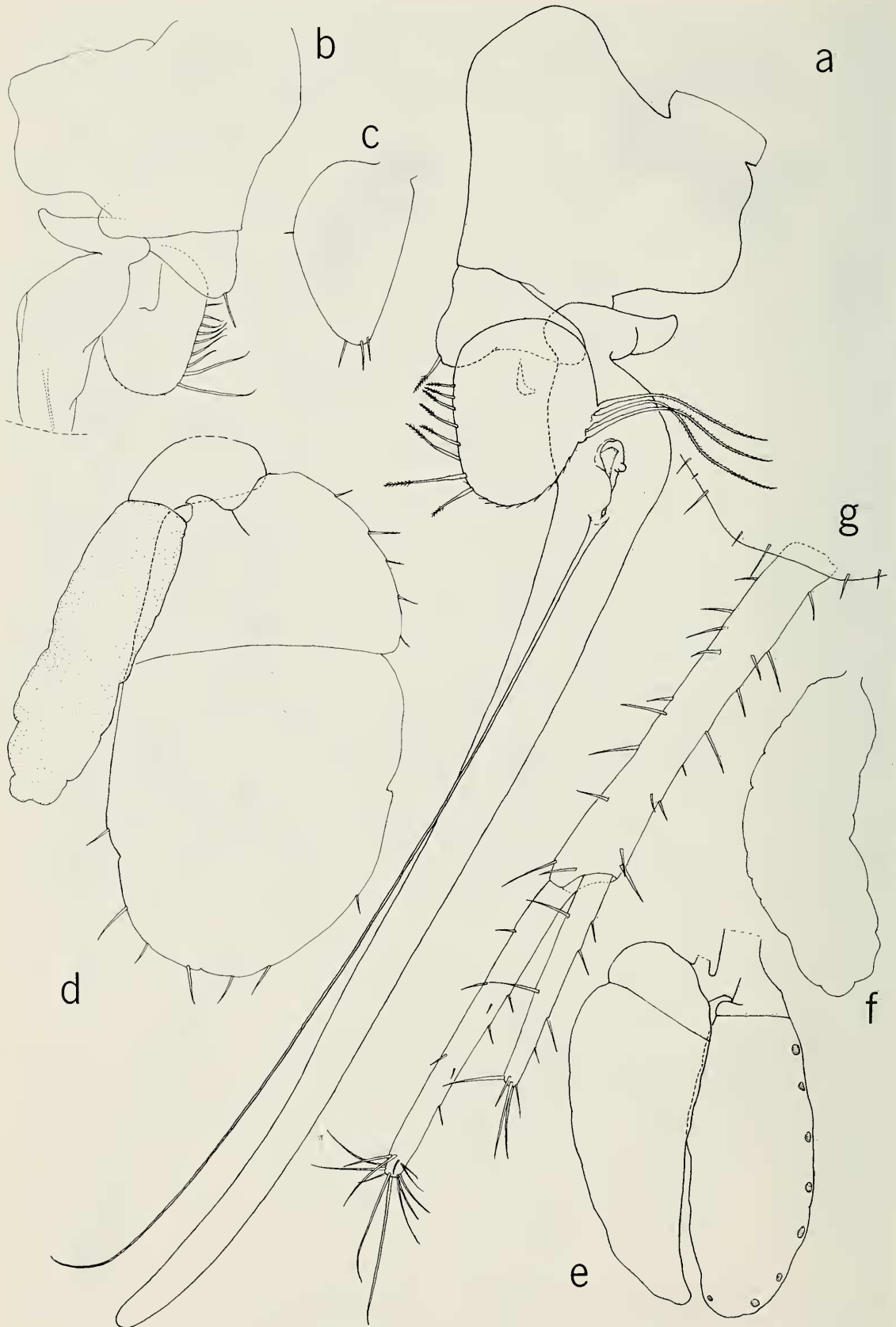


Fig. 3. *Calasellus longus*: a, ♂ pleopod 2, anterior; b, ♂ pleopod 2, posterior; c, ♀ pleopod 2; d, ♂ pleopod 3; e, ♂ pleopod 4; f, ♂ pleopod 5; g, ♀ uropod.

distal segment nearly $2\times$ as long as proximal segment, suture between segments transverse. Pleopod 4 exopod distal segment nearly $5\times$ as long as proximal segment. Pleopod 5, exopod absent.

Uropods slender, linear; δ uropod about $0.8\times$ body length, endopod slightly shorter than protopod, about $4\times$ as long as exopod; ♀ uropod about $0.36\times$ body length, endopod about $0.84\times$ as long as protopod, about $1.5\times$ length of exopod.

Affinities.—*Calasellus longus* is similar in many respects to *C. californicus*. The most obvious differences are listed below.

	<i>C. californicus</i>	<i>C. longus</i>
Antenna 2	$0.75\times$ body length	$1.5\times$ body length
δ pleopod 1	Length = $2\times$ width	Length = $4\times$ width
δ pleopod 2	Endopod $2\times$ exopod length	Endopod $6\times$ exopod length
Pleopod 3 exopod	Suture oblique	Suture transverse
Pleopod 5 exopod	Rudimentary	Absent

The absence of the pleopod 5 exopod in *C. longus* is unusual and not, to my knowledge, found elsewhere in the superfamily Aselloidea, although absence of this exopod is characteristic of other superfamilies of Asellota. *Asellus (Asellus) amamiensis* Matsumoto, 1961 has a much reduced pleopod 5 exopod, but has a maxilla 1 inner ramus with 4 setae, placing it in the genus *Asellus*, well removed from *Calasellus*.

Habitat.—Shaver Lake is not a natural body of water, but is a reservoir for water power formed by Shaver Lake dam, 198 feet high, completed in 1927, across Stevenson Creek tributary, which is in the drainage system of the San Joaquin River. Having evolved long before 1927, *C. longus* is not native to Shaver Lake, but to the aquifer that supplies the spring from which the isopods were collected.

Acknowledgments

The Shaver Lake asellids passed through several hands before reaching me. They were collected by Michael Lassner, then a graduate student at the University of California, Davis, who gave them to Dr. Peter Moyle, Department of Zoology. Dr. Moyle gave them to Dr. James T. Carlton, then a graduate student at the same University, who in turn gave them to Mr. Ernest W. Iverson, Allan Hancock Foundation, from whom I received the specimens. My thanks go to all these people.

Literature Cited

- Bowman, Thomas E. 1974. The California freshwater isopod, *Asellus tomalensis*, rediscovered and compared with *Asellus occidentalis*.—*Hydrobiologia* 44(4):431–441.

- . 1975. Three new troglobitic asellids from western North America (Crustacea: Isopoda: Asellidae).—*International Journal of Speleology* 7:339–356.
- Harford, W. G. W. 1877. Description of a new genus and three new species of sessile-eyed Crustacea.—*Proceedings of the California Academy of Sciences* 7(1):53–55.
- Matsumoto, Kôichi. 1961. Two subterranean isopods from the Amami group (Ryukyu Islands), with a description of a new species.—*Annotationes Zoologicae Japonenses* 34(4):208–215.
- . 1962. Two new genera and a new subgenus of the family Asellidae of Japan.—*Annotationes Zoologicae Japonenses* 35(3):162–169.
- Miller, M. A. 1933. A new blind isopod, *Asellus californicus*, and a revision of the subterranean asellids.—*University of California Publications in Zoology* 39(4):97–110.

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